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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/495,899	02/02/2000	Hiroyuki Suzuki	032817-002	5436

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EXAMINER	
CARTER, TIA A	

ART UNIT	PAPER NUMBER
2626	

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/495,899	HIROYUKI SUZUKI	
	Examiner	Art Unit	
	Tia A Carter	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-17 and 19* is/are rejected.

7)☒ Claim(s) *6 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 1316 of the remarks, filed 6/28/04, with respect to claims 1-4, 6-9, 11,13 and 15-18 have been fully considered and are persuasive. The 35 USC 112 rejection of claims 1-4, 6-9, 11, 13 and 15-18 has been withdrawn.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5, 7-17 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim (US. 5859712).

Regarding claim 1, Kim discloses an image processing apparatus (Fig. 1a-optical system), comprising:

A first sensor having a plurality of reading elements arranged in a primary scanning direction (figs. 3a, col. 5, lines 51-61);

A second sensor having a plurality of reading elements arranged in the primary scanning direction, the second senor being disposed a predetermined number of lines apart from the first sensor in a secondary scanning direction (figs. 3a, col. 5, lines 62-66);

An integral correction portion (extra-line corrector 85) for correcting a data output time difference due to a position difference between the first and the second sensors by an amount corresponding to an internal number of line units (fig. 7, col. 6, lines 5-15); and

A fractional correction portion (intra-line corrector 86) for correcting the data output time difference due to the position difference between the first and the second sensors by an amount corresponding to less than one line unit (fig. 7, col. 6, lines 19-30).

Regarding claim 2, Kim discloses the image processing apparatus according to claim 1, further comprising:

A control portion (MPU 89) for enabling the fractional correction portion when a fraction is generated adding to integral lines of output time difference between the data from the first sensor and the data from the second sensor after changing a scaling ratio of the original image, wherein the change in the scaling ratio causes a change in the relative sped of the original image to the first and the second sensor (fig. 7, col. 6, lines

31-37 and col. 11, lines 1-12: methods (nearest-neighbor, linear interpolation, cubic convolution); col. 13, lines 36-54).

Regarding claim 3, Kim discloses the image processing apparatus according to claim 2, further comprising a third sensor having a plurality of reading elements arranged in the primary scanning direction, the third sensor being disposed a predetermined number of lines apart from the first sensor in the secondary scanning direction (fig. 3A, col. 5, lines 61-66).

Regarding claim 4, Kim discloses the image processing apparatus according to claim 3, wherein the first, the second and the third sensors read red, green and blue components of an original image, respectively (Fig. 7, col. 5, lines 16-17).

Regarding claim 5, Kim discloses the image processing apparatus to claim 4, wherein the first, the second and the third make up a contraction type color CCD sensor (fig. 7, col. 5, lines 51-52).

Regarding claim 7, Kim discloses an image processing apparatus, comprising:

A sensor-disposed linearly in a primary scanning direction, the sensor reading an image that has been decomposed into plural colors (figs. 1a-b & 3a-b, col. 6, lines 61-67 and col. 7, lines 1-1-4);

An optical system for projecting light from the image onto the sensor (figs. 1a-b, col. 6, lines 57-61); and

A correction portion for correcting a misregistration of the colors in the primary scanning direction due to a chromatic aberration of the optical system, the correction portion performing a misregistration correction for each of plural areas divided in the primary scanning direction (fig.3b, col. 7, lines 28-65).

Regarding claim 8, Kim discloses the image processing apparatus according to claim 7, wherein the sensor includes lines sensors for red, green and blue colors arranged by a predetermined pitch in a secondary scanning direction (fig. 7, col. 5, lines 51-67 and col. 6, lines 1-4).

Regarding claim 9, Kin discloses the image processing apparatus according to claim 7, wherein a predetermined test image is read according to a characteristic of a machine coupled to the image processing apparatus and wherein information for the correction for each area is obtained from the image data (fig. 11, col. 6, lines 57-67).

Regarding claim 10, Kim discloses the image processing apparatus according to claim 9, wherein the test image is a ladder chart in which black lines area arranged by a predetermined pitch in the primary scanning direction, a position shift among barycenters of the obtained red, green and blue image data is calculated, and boundaries of the area and correction coefficients for the areas are obtained as

information for correction for reach area in accordance with distribution of the position shift among the barycenters of the red, green and blue image data in the primary scanning directions (fig. 11, col. 6, lines 57-67 and col. 7, lines 1-17).

Regarding claim 11, Kim discloses an image processing apparatus for performing a correction process of color image data obtained by an image sensor having a structure in which a plurality of element arrays are arranged longitudinally in a primary scanning direction in parallel and separated by a predetermined pitch in a secondary scanning direction (fig. 3, col. 5, lines 45-67), the apparatus comprising:

A plurality of interline correction portions that use different reference colors for correcting a misregistration among the elements arrays of the image sensor in the secondary scanning direction (fig. 7, col. 5, lines 23-26; col. 6, lines 5-18); and

A correction output portion for outputting image data corrected in accordance with image data output by the plural interlines correction portions (fig. 7, col. 6, lines 56-67 and col. 7, lines 1-4).

Regarding claim 12, Kim discloses an image processing apparatus for performing a correction process of red, green and blue image data obtained by an image sensor including red, green and blue elements arrays arranged longitudinally in a primary scanning direction in parallel and separated by a predetermined pitch in a secondary scanning direction (fig. 3, col. 5, lines 45-67), the apparatus comprising:

A plurality of interline correction portions that use different reference colors for correcting a misregistration among the elements arrays of the image sensor in the secondary scanning direction (fig. 7, col. 5, lines 15-66); and

A correction output portion for outputting image data corrected in accordance with image data output by the plural interlines correction portions, as corrected image data (fig. 7, col. 6, lines 56-67; col. 7, lines 1-4).

Regarding claim 13, Kim discloses a color image processing apparatus, comprising:

A fine line decision portion for deciding whether the present pixel is on a fine line or not for plural image data having different wavelength components read by an image reading device (fig. 15, col.8, lines 58-67 and col. 9, lines 1-3);

A density correction portion for performing correction by increasing a density of image data of the corresponding wavelength components in a present pixel when the present pixel is on a fine line on the basis of a signal from the fine line decision portion (fig. 7, col. 7, lines 33-58); and

A chroma decision portion for deciding whether the present pixel has a chromatic color or an achromatic color using an output value of the density correction portion (fig. 6, col. 7, lines 33-40).

Regarding claim 14, Kim discloses the color image processing apparatus according to claim 13, wherein the fine line decision portion detects one- or two-dot width fine lines with a high density (fig. 6, col. 7, lines 1-28).

Regarding claim 15, Kim discloses the color image processing apparatus according to claim 13, further comprising a print image data generation portion for generating image data for printing using the output value of the density correction portion (fig. 7, col. 7, lines 59-65).

Regarding claim 16, Kim discloses the color image processing apparatus according to claim 13, wherein the density correction portion performs correction by increasing a density of image data of wavelength components except for a wavelength component having best modulation transfer function (MTF) characteristics fig. 16, col. 9, lines 14-40).

Regarding claim 17, Kim discloses the color image processing apparatus according to claim 13, wherein:

A sensor included in the image reading device has a plurality of element arrays corresponding to different wavelength components, the plural element arrays being disposed separate from one another in a secondary scanning, direction different from a primary scanning direction 9fig. 3, 7, col. 5, lines 45-66),

An interline correction portion is provided for correcting a phase shift among image data of the plural different wavelength components due to a misregistration among the plural element arrays (fig. 7, col. 6, lines 5-18),

The density correction portion performs correction by increasing a density of image data of a first wavelength component (fig. 7, col. 7, lines 40-57), and

The interline correction portion performs correction by processing image data of the first wavelength component by an interpolation process Fig. 7, col. 6, lines 5-18).

Regarding claim 19, Kim discloses the color image processing apparatus according to claim 17,

wherein the density correction portion performs correction by increasing a density of image data of a second wavelength component and without increasing a density of image data of a third wavelength component (fig. 15, col. 8, lines 28-66), and

wherein the interline correction portion performs correction by processing the image data of the first and second wavelength components by the interpolation process using the image data of the third wavelength components as a reference (fig. 17, col. 10, lines 8-35).

Allowable Subject Matter

3. Claims 6 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yoshida et al. (US. 6538769), Tsuji (US. 6621602), Yoshinaga (US. 5570206) are cited to show related art with respect to image reading apparatuses.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tia A Carter whose telephone number is 703 - 306-5433. The examiner can normally be reached on M-F (7:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A Williams can be reached on 703-305-4863. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KA Williams

KIMBERLY WILLIAMS
SUPERVISORY PATENT EXAMINER

Tia A Carter
Examiner
Art Unit 2626

TAC
11/8/04